



PATENT ABSTRACTS OF JAPAN

(11) Publication number: **63129034 A**(43) Date of publication of application: **01.06.88**

(51) Int. Cl. **C03B 37/10**
// G02B 6/00

(21) Application number: **61271528**(22) Date of filing: **14.11.86**(71) Applicant: **FUJIKURA LTD**

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(54) TREATMENT OF OPTICAL FIBER**(57) Abstract:**

PURPOSE: To greatly improve the radiation resistant characteristic of an optical fiber and to inexpensively obtain the optical fiber which is usable for a long period of time in a high radiation atmosphere by subjecting the optical fiber to a heating treatment in a hydrogen atmosphere.

CONSTITUTION: The optical fiber 1 is heated by a mantle heater 5 in the state of maintaining the hydrogen atmosphere in a pressure vessel 2 in which the optical fiber 1 is housed by replacing the air in the vessel 2 with hydrogen. The heating treatment temp. is preferably $\approx 150^{\circ}\text{C}$, more preferably $\approx 200^{\circ}\text{C}$. The radiation resistant characteristic of the optical fiber is greatly improved and the optical fiber which is usable for a long period of time in the high radiation atmosphere is provided. In addition, the radiation resistant characteristics of the optical fibers added with F and B_2O_3 are also improved according to this treatment method and, therefore, the use of the wide band G.I. type optical fiber, which is produced by adding F, etc., thereto, in the high radiation

atmosphere is also permitted.

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